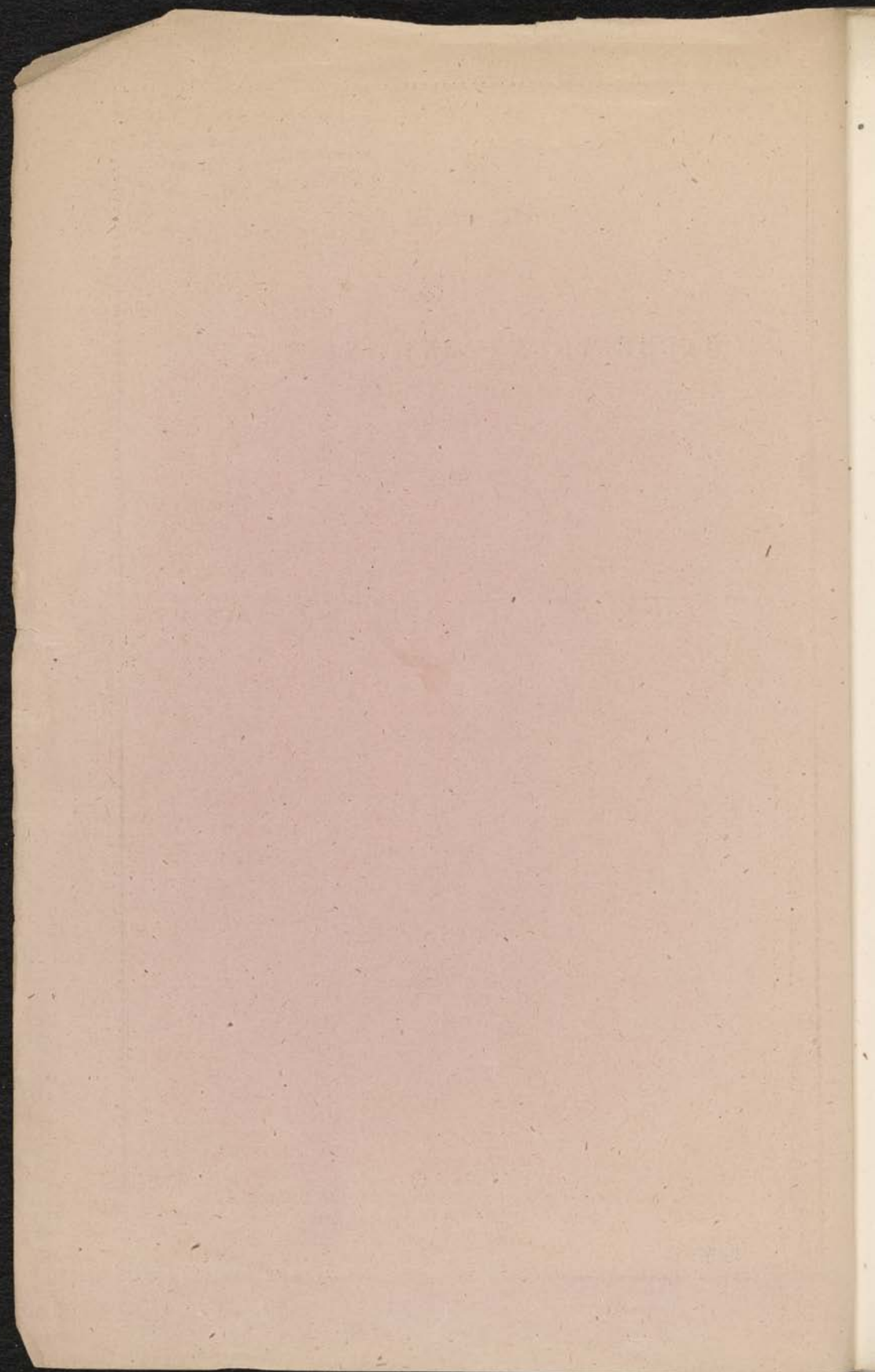


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THE
CAUSE, TREATMENT AND CURE
OF
CHOLERA,

BY
ALEXANDER McBRIDE, M D

CINCINNATI:
A. MOORE, BOOK AND JOB PRINTER, TIMES BUILDING.
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PREFATORY NOTICE.

The following pages are a reprint of articles originally appearing in the *Cincinnati Lancet and Observer* for May and June, 1866. We have read Dr. McBride's contributions to the literature of cholera and the general principles of treatment with much interest; and the originality of his views, together with their practical character well warrant the propriety of their publication in their present form. The introduction of this little monograph to the attention of the people outside of the profession we believe will be calculated to do good, by instilling into the popular mind correct and philosophical views of the great threatened scourge.

E. B. STEVENS, M.D.,
Editor of *Lancet and Observer*

CHOLERA:

ITS CAUSE, TREATMENT AND CURE.

THE cure of Cholera is my theme ; its cause, and whether it be contagious or not, I leave to the investigations of others. The nature of the disease, however, must be briefly considered, or its proximate cause, in order to make the proposed method of cure, rational.

Post-mortem examinations have constantly revealed one thing, congestion, and nothing else with any regularity ; congestion of the nerve centres ; venous engorgement of organs and of the intestines, precisely what would be predicted from the coldness and spasms manifested before death. Congestion of the bowels has not been found a constant condition after death, and no doubt for the sufficient reason that this is relieved by evacuation of serum nearly as fast as found. The symptoms before death, more clearly than appearances after, point out congestion or loss of tone of the veins and capillaries of the bowels as the objective point, as the proximate cause. In fact, when we consider the large amount of fluids abstracted from the circulation, through the capillaries of the bowels, in a short space of time, we are forced to admit that the condition of those parts must be engorgement constantly relieving itself by evacuation. The post-mortem condition of the bowels and other organs in those cases where death is said to have taken place without evacuation, has never been published to my knowledge.

I by no means propose to decide as to the nature of the remote cause, and the parts of the organism upon which it first operates, but merely the pathological condition which we have to meet. I conclude, then, that the condition of the veins and capillaries of the bowels is that of congestion, or at least these vessels are in an atonic condition rapidly receiving and discharging the liquid constituents of the blood.

In 1849, Dr. Hawthorne published an essay upon the treatment of Cholera, which was very ingenious. According to him, the fainting and collapse were due to the volume of blood being so rapidly diminished that the arterial coats could

not contract equably upon their contents, and hence congestions of the nerve centres from loss of equilibrium. He proposed to remedy the difficulty by opium to contract the arteries, camphor and the like internally, and dry heat externally to invite action to the surface, to counteract thereby the efflux from the bowels, and the introduction as fast as possible of hot drinks to refill the depleted vessels. Now this was a very plausible method, and no doubt very practical in a certain stage of the disease; in fact, it was very successfully practiced by myself and others in the early part of the disease, but the large amount of opium recommended by him was certainly ill adapted to that stage of the disease where congestions are established elsewhere than in the bowels. Large doses of opium are certainly no remedy for congestion of the nerve centres or of the lungs or liver, and probably not for an advanced stage of that condition of the bowels.

The problem is: *To restore the lost tone, and diminish the increased calibre of the veins and capillaries of the abdominal viscera, of the bowels chiefly.*

Have we an article of medicine that will nearly always, under the most desperate circumstances, give activity, infuse new life into the capillaries of a part laboring under passive congestion, or in the state of relieving congestion by exhaustive discharge? We have such a remedy. Neither quinine nor opium can be relied on to accomplish this. Quinine cures ague by maintaining such vascular tone that congestion can not take place; opium cures in nearly the same way, but give either of these remedies when congestion (in the chill), is at its height, and you risk the life of the patient, for the congestion is liable to be increased by their action. The same bad effect of these medicines may be observed in certain stages of typhoid pneumonia, or as it should be called, congestive pneumonia. At a certain stage of this disease, quinine will disperse the accumulated blood like a charm; at a later period, the difficulty seems to be increased by it, and the effect of opium is worse still. Now it appears to me that quinine operates by giving tone to the vascular system, the arteries and capillaries chiefly, and this it will do in certain conditions of the system; but when the capillaries of an organ or part have become paralyzed or nearly so by extreme engorgement they are no longer obedient to its action, but the larger trunks, not paralyzed, being still obedient to the stimulus, force more blood into the engorged part, thus increasing the difficulty. The same is true of opium, with this difference that it adds to its bad effect a sedative action upon the par vagum and other nerves. I think alcoholic stimuli act

similarly, as also some others. Any one who has heroically given and carefully watched the effects of these remedies in a great variety of diseases must agree with this view.*

Now I think if we treat Cholera for what it is, and not for its name clothed in terror, we will have to call to aid no new principle; we have congestion to treat, or if not this in the beginning or during the exhaustive stage, we have certainly a condition of the capillaries of the bowels so closely allied to it that there is no pathological distinction in the vessels themselves, they have lost more or less their contractility.

I now ask for a suspension of the reader's judgment for a few moments, and beg that he will not condemn till he has carefully read and thoroughly considered what I am about to say. Those who have read some of my former articles and especially that which appeared in the July, 1861, number of the *Lancet and Observer*, will hardly be surprised when I say that the remedy to which I look for more benefit than any other in Cholera is *Cantharides*. This will always act promptly and speedily upon the capillaries, even when nearly all the functions and powers of the body have failed; and the difference is not always important whether it is taken internally or applied externally. *Cantharides* is an old remedy, but what I claim to offer as new is the application of it and the quantity that may be given to benefit.

Before proceeding to repeat some of my observations in the article above referred to, I wish to give prominence to the statement of Dr. Richardson, made in the Cincinnati Academy of Medicine, as reported in the January number of the *Lancet and Observer*. His statements are of vast importance, and I have no doubt are entirely true. He says he has "great faith in a large fly blister over the whole abdomen." He thinks he was the first to adopt this practice in 1850, and used it satisfactorily for nearly two years. (He is mistaken as to priority, for it was an old remedy for common Cholera, and was used in Asiatic Cholera as long ago as 1831.—Vide *Cyclopedia of Practical Medicine*, pp. 401 and 422.) He "never knew but one case to die when vessication was produced before collapse." Now the experience of the writer in the *Cyclopedia* who practiced in Sunderland in 1831 and 1832, was almost identical with this. The coincidence is noteworthy. But to me the most interesting part of Dr. R.'s remarks is where he almost made an important discovery, the same which I made

* I urge no opinion as to whether these medicines act through the nerves or stimulate the vessels directly, it amounts to the same.

about two years later. He says, "I do not believe that mere vessication effects a cure," for he endeavored to obtain the same result by vessicating with ammonia, chloroform and the like, but with no good result. He then says, "My theory, and every man is entitled to his own theory, is that the cantharides is absorbed and acts as a persistent stimulant." In this last opinion the Doctor is entirely correct and the only wonder is that it did not occur to him to administer the remedy internally.

Now observe the almost identity of my observations quoted below from the *Lancet* of 1862. I was treating the congestions which occurred in typho-malarial fever, but the principle involved is the same. "In those cases that were at all remediable, the abatement of bad symptoms generally began within thirty minutes after the application of the blister. . . . Now what did this prove? Certainly not that vessication was the cause of the improvement," etc. Having made this observation in many cases, I proceeded to administer boldly large doses of the tincture of cantharides internally, in the course of fevers and other diseases, at that period properly called the blistering stage, and in many cases where blistering would be hardly expected to be attended with success. The result seldom or never disappointed my expectations. I shall not trouble the reader with repeating many of the cases reported in '62, but quote the following: "I have also given it in Cholera, of which I treated some cases in 1860, or cases that were no way distinguishable from Asiatic Cholera. One of these cases particularly went through the severe stages of Cholera with the characteristic purging and vomiting, cramps and blue surface with parboiled hands. In this extreme condition I gave him largely of tincture of cantharides and no other active medicine. Of course, I applied external warmth and gave hot drinks. Improvement was speedy after the medicine."

In the spring of '61 I treated a young woman for pneumonia of no great severity, but as the lung symptoms abated there came on a diarrhœa of the most obstinate and exhaustive character. Opiates, astringents, terebinthinates and the like had little or no effect. It was too feeble a case for mercury. The evacuations were liquid and salmon colored. She became very feeble, and death was imminent. I gave a teaspoonful of the tincture, and the features of the case were soon improved. Some smaller doses were repeated, and she mended rapidly.

In 1861 I mentioned my use of this remedy to the venerable Dr. Awl, of Columbus. He said my remarks reminded

him of the fact that he had once given to a Cholera patient rather largely of tincture of cantharides with good effect, but his experience had gone no further.

There is absolutely nothing to fear of any irritating effect of this medicine upon the mucous membranes nor upon the urinary organs. I have given it in drachm and a half doses frequently. A drachm is my common dose in ordinarily severe cases, repeated in the same quantity, or less, or more, according to the emergency. Its good effect is always manifest in a short time, frequently in twenty minutes. I have thus treated a great variety of cases. Severe cholera morbus I have treated in several instances, and in every case with prompt success. The patient will seldom vomit or purge after the first dose of a drachm or drachm and a half. I have successfully given this medicine in a large variety of cases, and can not call to mind a case wherein manifest injury was done, and this is more than can be said generally of powerful medicines. I have thus treated hydrocephalus, cerebral congestion, cerebro-spinal meningitis, gangrenous erysipelas, and many of those atonic diseases met with in the army, in short, nearly all those atonic states of disease in which a tonic action is wanted in the capillary system. I gave two or three drachms in a case of severe puerperal convulsions, with no bad result, for after a moderate bleeding the patient recovered speedily. I frequently combined one drachm of the tincture with a single dose of a hydragogue cathartic in army dropsy, with the happiest effect in every case.

I mention this variety of cases to show the great range of application of this remedy and to illustrate its uniform effects on the capillary system, and also to illustrate that it is irritating to neither mucous membranes nor nerve centres in any case. External dry warmth and hot drinks, as hot as can be easily swallowed are by no means to be neglected during this mode of treatment, for the pathology and demands of the system are the same with this as with any other method.

Whether it will ever be beneficial to apply blisters in conjunction with the internal use of the fly I am not certain. I have so done in a few instances in other diseases, and with good results, but I strongly suspect that, ordinarily, a fly plaster is equivalent to an indefinite dose of the tincture. This will be observed, however, that but little or no external effect will be obtained from a fly plaster after the patient has taken freely for some time of the tincture.

After the vomiting and purging are arrested, the practitioner will exercise his judgment about giving the ethers and the like, should the cramps continue. My opinion is that if

Cholera :

the arrest is effected by means of the cantharides, little else will be necessary than to maintain the temperature and gradually fill the patient with hot drinks. According to principle as well as according to my experience, so far as I have had experience, the action of this medicine is indicated equally in the choleric and collapsed stage, for in the choleric stage the capillary system of the bowels demands action, and in the collapsed stage there is added to this demand that occasioned by the congested state of the nerve centres. But if this medicine has been properly applied in the choleric stage, it is hardly probable that in the same case it will be needed in the collapse, for it will probably not occur. However, if a case should be so rapid in its action, and the stomach and bowels reject everything with such promptness that even this medicine should produce no effect, and hurry on to collapse, I should not despair, but follow it with the remedy. If such a case should occur, it will be eminently one for the blister or the copious affusion of the tincture upon the front of the body.

This medicine will act in harmony with other medicines to as great an extent as almost any other, though it will often be found that no adjunct is necessary. Its action is in some respects essentially different from that of opium, and in some respects antagonistic of it; it will promptly overcome strangury produced by opium, and I have seen it relieve in a short time that blueness of the features occasioned by a dose of opium in some cases of pneumonia, but with the proper tonic action of opium upon the arterial tunics, I think it acts in harmony; with diuretics and purgatives it agrees, and is itself an antispasmodic; with the salts of iron, the alkalies and veratrum its action is harmonious, and with arsenic its effect is excellent in certain cases.

This medicine is not aphrodisiac in any proper sense of the term. When a poisonous dose, such as an ounce or more of the tincture, has been taken, priapism has followed, but this should not deter us from its proper use. If that accident should happen, it is probable that a large dose of laudanum would relieve it, but I never saw the least of this effect during the whole time that I have used this medicine so freely, and as to strangury, I have never seen an instance of it to any troublesome extent. Strangury will ordinarily result to some extent, in about a week from giving twenty to twenty-five drops of the tincture three times per day to a patient with any mild form of diseases, but the large dose in severe atonic disease produces no such effect.

In many instances while in the army, when I could not

command the tincture, I ordered the application of large fly plasters, to be removed in an hour, and the surface washed to prevent vessication. The effect was the same as if the medicine had been taken internally, but not quite so speedy. But any one will perceive that the external use can not always be relied on; as for instance in the collapsed stage of Cholera, when the skin is so cold and dead that a leech can not draw blood, it can hardly be conceived that it could absorb enough of anything to do much good; even if endosmose should effect something, the product must be conveyed too slowly to effect much, but in this case, especially if the stomach should yet be irritable, I should take the chances of both internal and external application.

With regard to strangury following the use of the fly, it is a good symptom generally, and I have heard an old and experienced physician say that he had seldom or never known a case of disease do badly where strangury followed a blister.

I have made no attempt in the foregoing to direct a systematic treatment of Cholera in all respects and through all its stages, but to point out a principle upon which it should be treated; that of directing efforts to a restoration of tonicity of the capillaries; also to point out as clearly and forcibly as the limited space at my command and my abilities would permit, a remedy and the mode of applying it, which a dozen years of observation have taught me to rely on more than any other, singly or combined, to restore equilibrium of tonicity to the capillaries in almost every asthenic congestive disease as well as some other forms of disease. Circumstances would not permit an article of greater length, but I hope the suggestions will be as clearly comprehended as though they had been enforced by a greater variety of illustration and expression. I have said nothing about the incipient and febrile stages of the disease, thinking there was no feature that would illustrate the view which I have aimed to impart with any more clearness than will appear from what I have written. I cordially invite all to give this remedy and the suggested principle a fair trial. Let all be prepared with some well considered plan to meet the huge spectre at Philippi.

THE consideration of the treatment of Cholera upon the principles suggested in my article of last month naturally calls forth some reflections upon the entire subject of congestive diseases and also upon the prophylaxis of Cholera and the treatment of its incipient and febrile stages. Admitting, or not admitting all that may be said for or against its contagious or epidemic nature, and whatever may be claimed as its re-

mote and exciting causes, what have we in Cholera but a congestive fever proper? and in the incipient stage what is the obvious condition of the organism else than one of rapid loss of tonicity of the capillaries—especially of the bowels? In those regions where malignant agues, *pernicious fevers*, as they are called, prevail, what does the physician consider to be his duty to his patient who is threatened with or has already had a chill? He at once and without loss of time proceeds to equalize the circulation and produce a tonic impression upon the entire vascular system by the most prompt and energetic means with which he is acquainted. I ask any one who has had experience in treating rapidly fatal congestive diseases—what do you now think of the plan of equalizing the circulation by the slow and uncertain process of mercurialization, or even to emulge the portal system by a little blue mass, followed by rhubarb? If any medical gentleman of much experience has not seen patients lost by such dallying, either by himself or others, he has been more fortunate than the writer. It is not a week since I saw a patient die by means of such inefficient treatment. I think men of experience will admit that the first thing we have to do where dangerous congestion is apprehended—for the time when the attack may supervene after premonition is always uncertain—is to proceed at once to effect a tonicity, a firm contractility of the vascular system, or at least produce such unusual dynamia that local determination will be impossible, and that this is to be done by such means as quinine, arsenic, muriate of iron, piper nigrum, guaiac and opium at a proper stage; also blistering and the internal use of cantharides.

Now wherein does Cholera differ in principle from the class of diseases above mentioned except in the single fact that its fatality most commonly results from a too copious relief of congestion by excessive discharge out of the system of the fluids of the body, and in those cases which die without discharge, in their extreme rapidity of engorgement, though this really is no difference in principle. Or, perhaps, it will place the idea more clearly before the mind to put the question thus: Wherein does the objective point of treatment in Cholera differ from the same point in congestive diseases generally, except in that it ordinarily approaches a fatal crisis more rapidly, and that its rapid fatality results from relief by evacuation of that mass of fluids which it is the object of treatment to diffuse throughout the system?

It is not now my purpose to traverse the ground of the treatment of Cholera at large, trusting that my views in the main upon that subject have already been rendered clear, but

to bring the reader's mind to dwell upon what I think may be justly presumed to be the resemblance of the state of the capillary system of the abdominal viscera in the incipient and pre-incipient stages of Cholera to the condition of the same, in corresponding stages of other congestive diseases.

The idea here advanced of the resemblance of Cholera to congestive diseases generally will, no doubt, appear extravagant to those who have in their minds the image of a material poison introduced and raging through the system, but the comparison should not excite surprise in those, even when it is remembered that there are many who yet suppose that ague and miasmatic diseases generally are caused and perpetuated by a material poison—the “malarial poison”—finding its way into and residing in the system. It is not three years since that idea was held, and is yet for aught I know, by a physician who has made somewhat of a figure in the State, and now holds a Professor's chair.* The supposition of that class of thinkers was, and is still, I presume, that quinine cured ague by its antidotal effect on the “malarial poison.” They took no pains to explain how quinine performed its office in other asthenic diseases, nor how ague was cured by a variety of other agencies. Now I deny the existence of the inhering poison in either case. Let it be borne in mind that a material poison or agent, the cause of contagious or epidemic disease has never been isolated. It was attempted for three hundred years to cure syphilis by antidotes but no success was ever attained, and it is only within a very few years that the more intelligent surgeons have come to the conclusion that syphilis is to be treated on rational principles like disease generally. Then for lack of proof to the contrary, it comes to this: that neither by Chemistry, the microscope or other means has any peculiar agent or product been detected in connection with Cholera, that might be even a probable cause. This clearing up then may render it not extravagant to compare Cholera with ague.

Prophylaxis then, it might be inferred from the foregoing, consists in little or nothing else than maintaining a tonic state of the system, and this is to be accomplished mainly by maintaining a good state of digestion, by proper and sufficient clothing and by avoiding the debilitating effects of excessive labor, solar heat and the damps and chills of the night. This is about the whole briefly stated. I need not quote the large

* I design here no allusion to Dr. Mitchell who discovered fungi apparently in connexion with ague, nor to Dr. Salisbury who has amplified the subject.

amount of authority in which it is conclusively shown that the poorly fed, poorly clad, poorly cared for and overworked of any community are those most prone to the attack of Cholera. This class are generally found also to live in the most unhealthy localities; and every physician knows that this same class are most obnoxious to congestive diseases, and to sun stroke. When it was the custom to treat intermittents with mercurial and other alteratives and urge a poor diet, the patients seldom or never got well till favored by some kind of lucky accident. Now when mercury is discarded in the treatment of this disease, and quinine, arsenic and the like are used as auxiliaries to an abundant use of wheaten bread and beef, we have comparatively little trouble with our ague patients. Hence, I conclude a priori, that good diet, clothing, housing and freedom from toil and care are the best prophylactics of Cholera, as they are of disease generally.

I know not if it be good practice to recommend medicine to persons in good health, as preventives of disease. Quinine is extensively used in some parts of the country in the malarious season by persons in ordinary health to prevent ague, and this practice seems to be based upon experience, for in some regions, during some seasons, unless this is done, the population will be so laid down by ague that there will not be enough well to do the necessary labor. At all events, when a country or region is threatened with a general visitation of so alarming and fatal a disease as Cholera, it will be well at least for every person diligently to inquire whether he be in good health, especially whether he have any debilitating ailment, and every person found thus ailing should be recuperated upon principles of tonicity, but not with Cholera specifics: Rhubarb, quinine, iron, opium, arsenic and the like, are the kind of medicines most likely to be applicable, but during the epidemic constitution of Cholera even rhubarb as well as all other cathartics must be employed with great circumspection; and whoever prescribes arsenic should by no means forget the advice of Dr. Miner, of Connecticut, that opium should always be given in connection with it to ensure its best effects. Dr. Kirtland many years ago advised that as a general rule the *arsenical solution should always be accompanied with the same number of drops of laudanum*. Twenty years experience has taught me the excellence of this rule, and I mention it here particularly because I suppose it is from a want of general knowledge, or appreciation of it that arsenic is not more used for the treatment of atonic conditions of the system. Quinine will, no doubt, be the best medicine in many regions for those who should take medicine, and rhu-

barb with or without the accompaniment of quinine or some such tonic as pulverized columbo with a little soda, will, probably, be the best laxative.

Brandy and other distilled spirits are certainly not prophylactics, unless used with great moderation, for their excess causes debility and a tendency to congestion. Even good ale and pure wines, excellent tonics and stimulants as they are on proper occasions, are not to be recommended in indiscriminate quantities.

When an individual is attacked, during the prevalence of Cholera, with a diarrhœa or dysentery ever so slightly, no one can say that it is not the beginning of Cholera. The case requires attention; but it should be undertaken with due moderation. It will not answer when there is so much danger to say there is no danger in the case, for it has not a remote resemblance to Cholera. This would not be true, for every case of diarrhœa whatever has a resemblance to the commencement of most cases of Cholera, for they nearly all commence with a diarrhœa; and it is better to cure many scores of cases of diarrhœa unnecessarily than to lose one of our neighbors by means of a diarrhœa neglected.

Now when I say that mercury in bowel complaints is not necessary, either for its alterative or purgative effect, I do not speak ignorantly nor from prejudice, but with a full knowledge of the import of what I am saying, based upon a good deal of observation. Many years ago, I found that by using more opium and less mercury than most physicians, in the treatment of bowel affections, I met with very flattering success. A few years later I made the further observation that by using still more opium and no mercury, my success was better than before. But there can be no serious objection to using one-tenth of a grain of the proto-chloride with each full dose of opium, provided that the opium should generally be in liberal quantity. If a purgative or laxative is deemed necessary in any case previous to the employment of opiates, a cautious dose of rhubarb and soda, or four to six drachms of castor oil with twenty drops of laudanum, will be all that is necessary generally; then follow on with liberal opiates and bland nutritious diet till semi-constipation is effected. The purgatives will be more likely to be indicated in cases of a dysenteric character than in diarrhœa. If the diarrhœa is at all colliquative, or does not yield readily to opiates and a restricted diet, after duly considering the probability of a purgative being demanded to remove irritating matters, in cases where this has not already been done, the propriety of astringents should be considered. It is not always an easy point to determine

whether the patient should be purged or not. It certainly is not desirable to give strong doses of opium and astringents in a case where the diarrhoea is perpetuated by irritating matters in the bowels, neither is it safe practice to give a purgative when the bowels are already being exhausted by a passive efflux. If the purgative has already been given, and the opiates do not arrest the discharge, the course is clear, proceed with the lead and opium; if no purgative has been given we will have to decide by the quality and quantity of the evacuation, and by the presence or absence of pain in the bowels. If after considering these points, it appears that the diarrhoea is kept up by irritating matters in the bowels, the oil and laudanum should be given previous to the lead, if not the acetate of lead should at once be added to the opium.

Should the diarrhoea be persistent from time to time, and become chronic or semi-chronic, I think nothing will be more likely to do good than the arsenical solution suitably combined, and the formula which I have used with almost unbroken success in this and other forms of diarrhoea is the following: *R* Sol. Potass. Arsenitis. Tinct. Opii, aa. $\text{f}\text{3ij}$.; Tinct. Piper Nigr., $\text{f}\text{3jv}$. *M.* Dose, twenty to thirty drops three times per day, or every six hours. The regular meal or some form of food, should always be taken after this medicine, otherwise it will be liable to cause gastric pains. More opium may be added to this if deemed necessary. This is about the way in which I would treat incipient Cholera, or diarrhoeas which it was feared might eventuate in Cholera, but as soon as it became apparent or strongly probable that the case was one of Cholera, I should not tamper, but proceed at once to employ the *prime remedy*, the drachm dose of the tincture of cantharides as before detailed; or the large blister to be removed in an hour, as the judgment or fancy of the prescriber may dictate, for the difference can not be great at this stage. And I really should advise that the plaster be removed in an hour or thereabouts, for no good will come of making a blister over the entire abdomen, and the patient certainly would feel greatly annoyed to lie in bed a week or two for the healing of a blister merely as it would appear to him.

As Cholera has been called and no doubt is a fever proper, taken in its entirety, the reader may inquire what effect will this highly stimulating mode have upon the febrile stage of the disease. To this I reply that if we succeed by this method of treatment or any other in arresting the disease in the incipient or choleric stage by effecting a state of tonic equilibrium of the vascular system there will, probably, be no febrile stage; and if the case, by reason of not being arrested

in one of these stages, goes on to the stage of collapse, the only rational course still, with a view to preventing death or a dangerous and tedious fever, is to urge on the principle of dissipating the centric congestions. To accomplish this speedily, mercury is too feeble, arsenic is too slow, quinine is impotent and opium destructive, derivation and counter-irritation are rational in idea and perhaps somewhat effective, but why wait for the action of these slow and uncertain remedies when we have one which will in a few minutes act directly upon the capillaries and stimulate them to act.

But the febrile stage will sometimes follow the collapse, and concerning this a good deal might be said, but much is unnecessary. Nothing up to this date has shown this fever to be materially different from enteric fever. During some of its phases it has somewhat the appearance of typhus, but on the whole the general symptoms would lead any one unacquainted with the antecedents of a case to call it typhoid fever without the rose colored spots, for it does not appear that either these marks of enteric fever or the maculæ of typhus have been detected in this fever. The condition of the glandular and follicular apparatus of the intestines is similar but not identical with that found in enteric fever: its course is similar, but shorter, and its termination more often fatal, and I humbly suggest that it belongs to that class of fevers, embracing typhoid and the like, which I have placed in the class of Nitrogenous Fevers, (vide *Lancet and Observer*, January, 1864,) and consequently little or nothing should be done to disturb the repose of the liver, but proper efforts should be made to encourage, and if necessary, to excite the action of the kidneys. The same careful system of nourishing the patient which is so necessary in typhoid fever is applicable here, and more attention should be paid to furnishing drinks. Turpentine and other diuretics are not to be given as a matter of course, but what Dr. Wood has said about turpentine (Vol. 1, p. 357, 5th ed.) is applicable here. From what knowledge I have of the action of arsenic I should think this was eminently a stage of disease in which to use it, especially if diarrhœa attends; laudanum, of course, should accompany it.

Dr. Lyon who seems to have had considerable opportunity for observing the fever stage, offers no special suggestions concerning the treatment. If the case assumes a very typhus aspect and especially if the urine should continue to be suppressed or very scant, it would certainly be a proper case in which to give the moderate dose of cantharides, twenty drops of the tincture every three to six hours, and this dose increased or diminished according to circumstances. For treating fevers

of this type in this way, we certainly have old and excellent authority; and even if the case should fall into a comatose condition, I should continue to use this remedy. Acetate of ammonia or acetate of potassa would probably be the best adjunct to this medicine for acting on the kidneys. There can be no objection to the conjoined use of arsenic and cantharides in such a case, both being given in conjunction with a proper amount of the salines above indicated.

